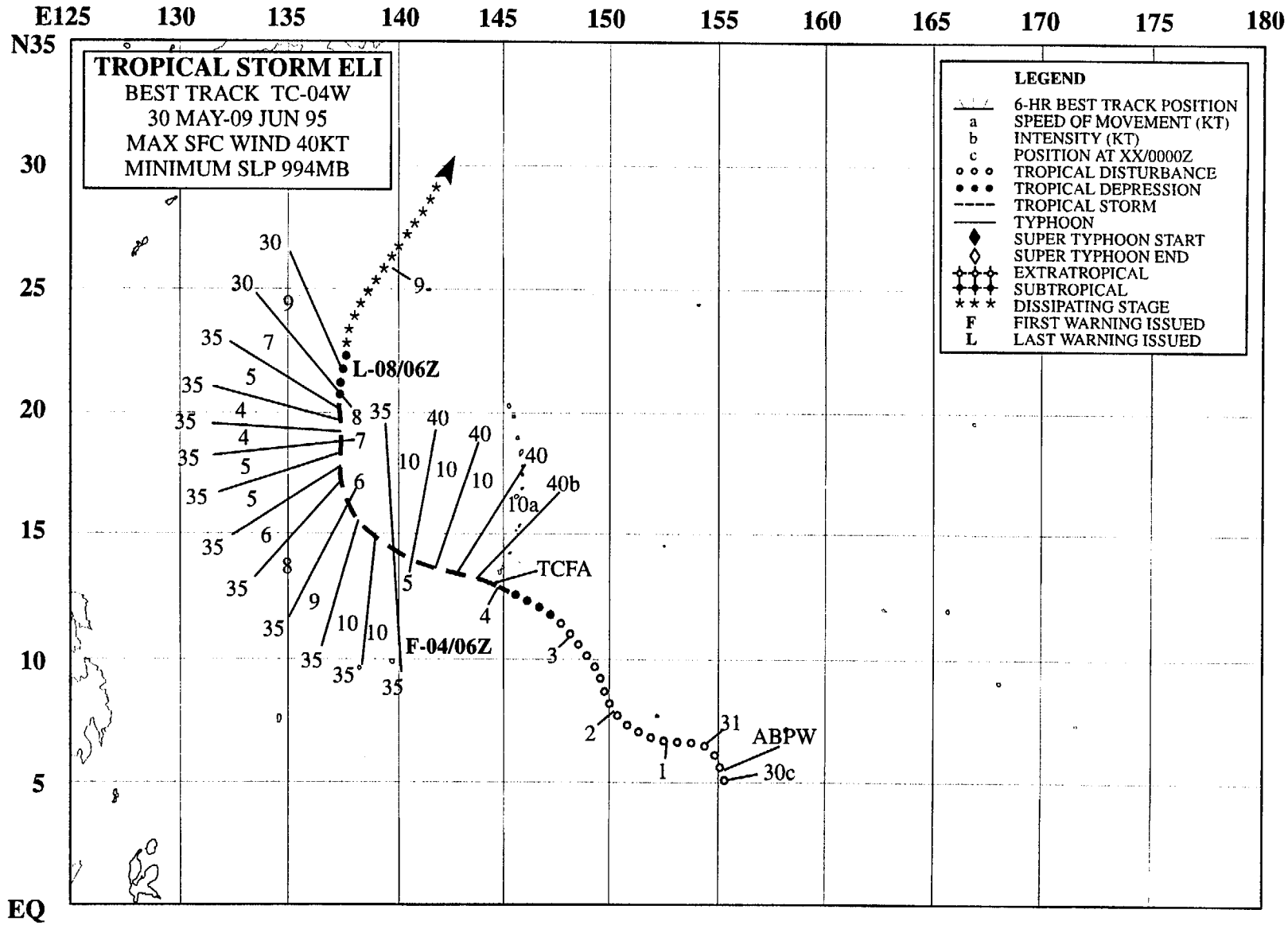
TROPICAL STORM ELI
BEST TRACK TC-04W
30 MAY-09 JUN 95
MAX SFC WIND 40KT
MINIMUM SLP 994MB
LEGEND
6-HR BEST TRACK POSITION
a SPEED OF MOVEMENT (KT)
b INTENSITY (KT)
c POSITION AT XX/0000Z
TROPICAL DISTURBANCE
TROPICAL DEPRESSION
TROPICAL STORM
TYPHOON
SUPER TYPHOON START
SUPER TYPHOON END
EXTRATROPICAL
SUBTROPICAL
DISSIPATING STAGE
F FIRST WARNING ISSUED
L LAST WARNING ISSUED
L-08/06Z
F-04/06Z
TCFA
ABPW
30c
E125
130
135
140
145
150
155
160
165
170
175
180
N35
30
25
20
15
10
5
EQ

TROPICAL STORM ELI (04W)

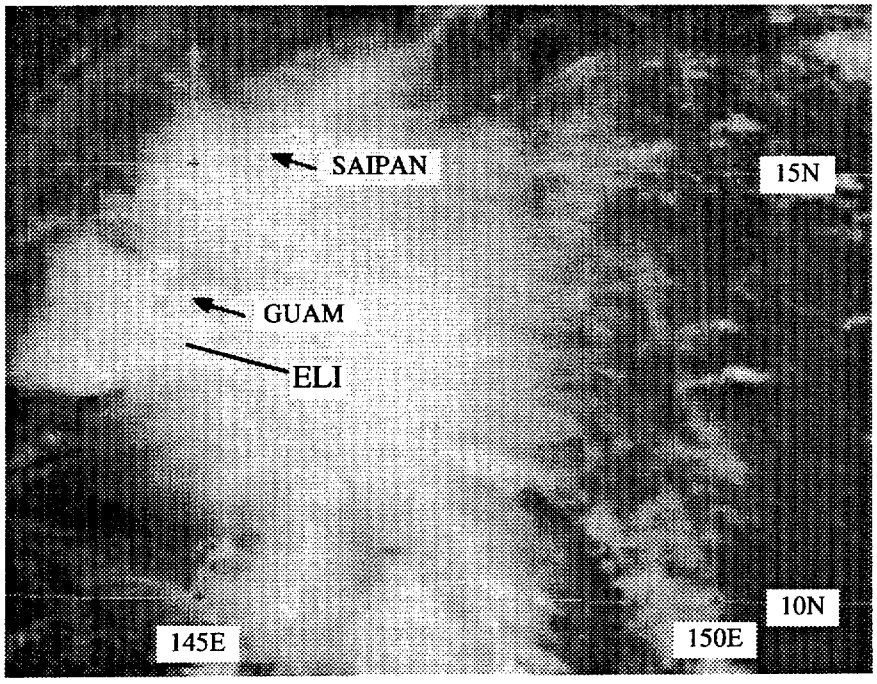

Figure 3-04-1 Eli at minimal tropical storm intensity passes south of Guam (032331Z June visible GMS imagery).

I. HIGHLIGHTS

Forming in a weak monsoon trough that stretched across Micronesia during late May, Eli was a relatively weak tropical cyclone that passed very close to Guam, turned northward, and then dissipated over open water southeast of Japan. While passing south of Guam on 04 June, Eli came within range of Guam's NEXRAD (see discussion section).

II. TRACK AND INTENSITY

During the last week of May, two tropical disturbances formed in a weak monsoon trough that stretched east-west across Micronesia (see Figure 3-03-1 of Deanna's summary). The westernmost of the two became Deanna (03W), while the easternmost became Eli (04W). The Significant Tropical Weather Advisory was reissued at 300800Z May to included the tropical disturbance that became Eli. Comments on this advisory included:

". . . A broad area of convection has persisted for 24 hours near 6°N 160°E. This broad area of convection, around 900 nm [1700 km] in diameter, is the third in a series of circulation areas associated with the establishment of the first monsoon trough of the '95 WNP season. This area is expected to continue to organize and develop over the next 72 hours. . . ."

This tropical disturbance continued moving northwestward through the Caroline Islands toward Guam. On the morning of 04 June, satellite imagery, Doppler radar (NEXRAD), and synoptic data from Guam, indicated that this disturbance had intensified. At 040230Z June, a Tropical Cyclone Formation Alert was issued, followed by the first warning on Tropical Depression 04W at 040600Z June. Based upon 34-kt wind observations received after the fact from Guam's commercial port, it was determined in postanalysis that Tropical Depression 04W had reached tropical storm intensity as it passed south of Guam on 04 June (Figure 3-04-1). In real time, Tropical Depression 04W was not upgraded to Tropical Storm Eli until 070000Z, when satellite intensity estimates increased to tropical

storm intensity. Earlier satellite intensity estimates remained at tropical depression intensity due to the appearance of westerly wind shear aloft on the cloud system and a lack of organized low-level cloud lines to define a circulation center.

At 080300Z June, Tropical Storm Eli was downgraded to a tropical depression in response to satellite imagery that indicated increasing northerly wind shear on the system. The final warning was issued shortly thereafter, at 080600Z, when satellite imagery indicated that the organization of the system had further deteriorated. In postanalysis, the intensity was held at 30 kt (15 m/sec) through 090000Z based on synoptic data.

III. DISCUSSION

NEXRAD observations of Eli as it passed south of Guam

On the morning of 04 June, the tropical disturbance that became Eli passed 30 nm (55 km) south of Guam. During the day, the wind speeds on Guam increased as the sea-level pressure fell. Position and intensity estimates made from satellite imagery did not agree with the synoptic reports from Guam. The location of the low-level circulation center as diagnosed from satellite and as determined from NEXRAD products differed by 90 nm (170 km). Guam's NEXRAD provided crucial information that allowed for a more accurate estimate of position of the low-level circulation center. The curved paths of the rainfall on the NEXRAD three-hour precipitation product (Figure 3-04-2) implied a circulation center was located near the heaviest band of rain located about 30 nm south southwest of Guam. In fact, for a few hours (centered at 040000Z), the NEXRAD generated alerts on mesocyclones forming near the downstream end of the curved rain band.

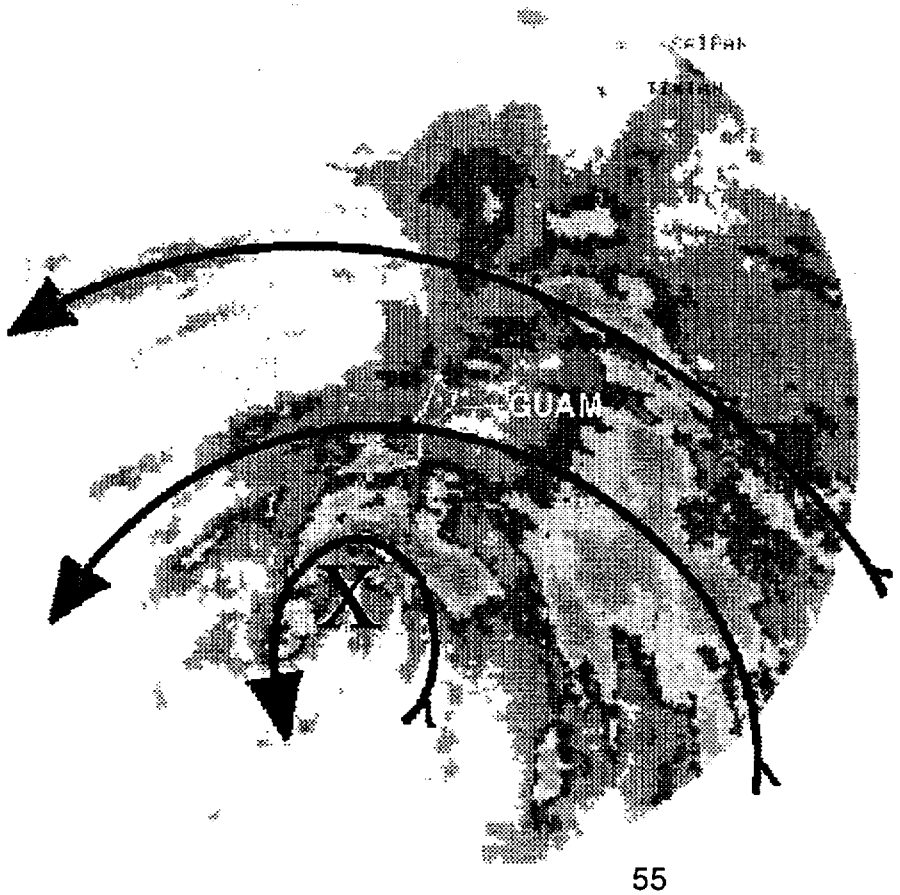

Figure 3-04-2 NEXRAD three-hour integrated rainfall total ending at 040100Z June. Shaded regions depicting the total rainfall over a three-hour period exhibit curved paths that imply a center about 30 nm southwest of Guam. The NEXRAD was producing mesocyclone alerts at the location marked with an "X".

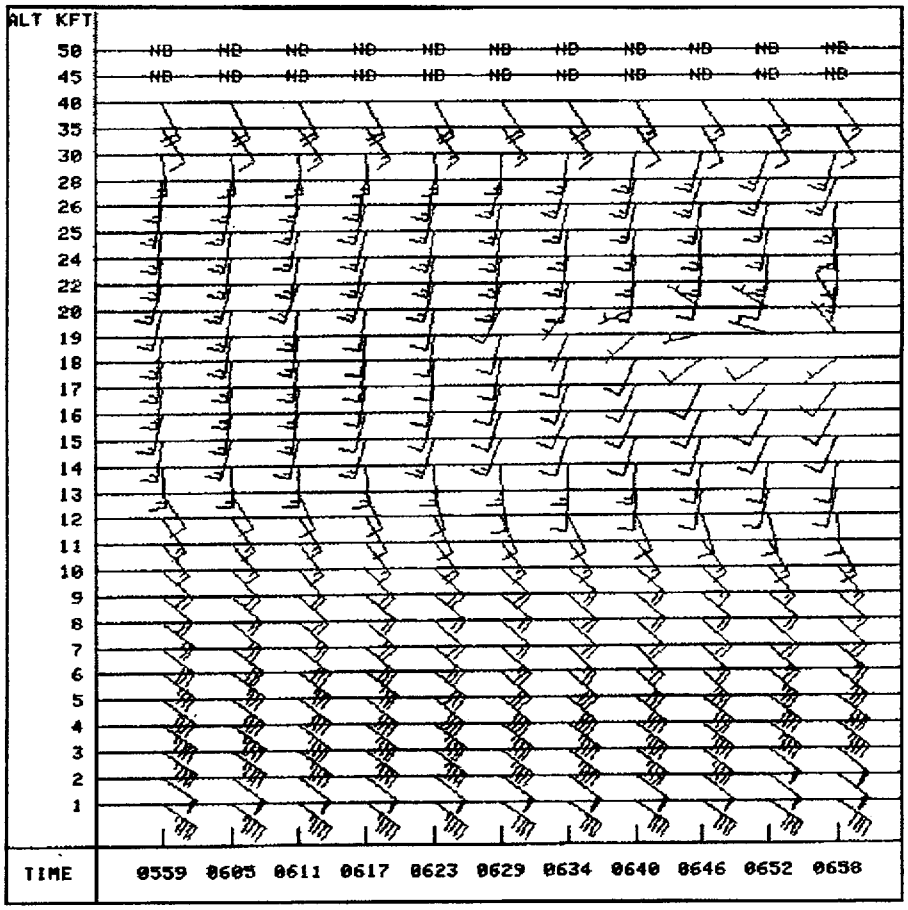

Figure 3-04-3 NEXRAD velocity azimuth display wind profile for the period 040559Z to 040658Z June shows the maximum winds associated with Eli are located at 2,000 to 3,000 feet.

The NEXRAD vertical wind profiles over Guam during the afternoon of 04 June (Figure 3-04-3) showed a peak wind velocity in the lowest levels (2,000 to 3,000 feet) of the troposphere. The 50-kt winds at 2,000 feet were reflected in a peak wind gust to 48 kt (25 m/sec) at Guam's commercial port.

In addition, the synoptic reports and information from Guam's NEXRAD suggest that Eli's wind distribution most probably featured a large asymmetry, with highest winds on the northeastern side and a very small region of light westerly wind close to the small low-level cyclonic vortex located at the western edge of the primary rain band.

IV. IMPACT

The two to three inches of rain that fell on Guam in association with Eli comprised roughly one-third of the total precipitation on Guam during an otherwise relatively dry month of June. No reports of damage or injuries were received.